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## SUMMARY OF EXECUTIVE ORDER 13123\* – IMPLEMENTATION AND RELATED TRAINING

### Guidelines

Official guidelines for complying with EO 13123 have been developed by the Federal Interagency Task Force administered by FEMP. They are available at:

[www.eren.doe.gov/femp/aboutfemp.html](http://www.eren.doe.gov/femp/aboutfemp.html)

### Requirements of EO 13123

On June 3, 1999, President Clinton signed Executive Order 13123, entitled “Greening the Government Through Efficient Energy Management”.

The Order states “agencies shall ensure that all appropriate personnel receive training for implementing this order.

- (1) DOE, DOD, and GSA shall provide relevant training or training materials for those programs that they make available to all Federal agencies relating to the energy management strategies contained in this order.” [Sec. 406(d) Training and Education]

The entire text of E.O. 13123 can be found on the FEMP Web site at:

[www.eren.doe.gov/femp/aboutfemp/exec13123.html](http://www.eren.doe.gov/femp/aboutfemp/exec13123.html)

Facility management and associated contracting personnel are specifically affected by the following:

The order requires that by 2010, Federal agencies achieve:

- **35% greater energy efficiency** in buildings relative to 1985 levels; and
- **30% cut in greenhouse gas emissions** from building-related energy use relative to 1990.

The order directs agencies to maximize the use of:

- **Energy Savings Performance Contracts and Utility Contracts**, in which private companies make energy improvements at their own expense on Federal facilities and receive a portion of the resulting savings;
- **Life-cycle cost analysis** in order for agencies to see the long-term savings from energy investments.
- **ENERGY STAR® and other energy efficient products**, everything from light bulbs to boilers; and
- **Renewable energy** technologies and sources (solar, wind, geothermal, and biomass).

In pursuit of these goals, consider the following:

- (1) In support of EO 13123, all FEMP courses have been updated to address its requirements. This Catalog provides the details on the training and how to obtain it.
- (2) Each agency has a Headquarters representative to the Task Force, who is responsible for providing guidance to agency implementation teams. Be sure your organization has a pipeline to that guidance.

### USERS' GUIDE TO THE FEMP TRAINING PROGRAM

#### What's FEMP Training? Who's It For?

The FEMP training program is divided into three parts:

- (1) *Training courses* teach students how to achieve energy-efficiency and water conservation at Federal facilities. Most participants are on-site engineers and their program managers, but attendance by Federal financial and procurement specialists is also important. Attendance by representatives from utilities, state and local governments, and private companies has increased. FEMP continuously updates and modifies these courses to improve quality. Currently, Continuing Education Units (CEUs) are available for the "FEMP Lights" and "Designing Low-Energy Sustainable Buildings" workshops.
- (2) FEMP's *Training Event Locator System* is designed to help you find related training courses and conferences provided by universities, professional associations and private organizations (see page 36). It is now available on the Web at:  
[www.eren.doe.gov/femp/resources/training/locator.html](http://www.eren.doe.gov/femp/resources/training/locator.html)
- (3) *FEMP-Sponsored Symposia* at national energy and water management conferences are also available (see page 8).

#### Is There a Preferred Sequence for Taking FEMP Courses?

How you navigate through FEMP courses depends mostly on whether you are a "technical" employee or a "contracting" employee, and of course, your energy or water improvement objectives.

#### ***Recommended Steps for Technical Specialists***

##### Step 1: Overview Course

- FEMP's FY 2001 "Revised Energy Management Telecourse" provides an overview of life-cycle costing, buying energy-efficient products, operations and maintenance, water resource management, energy savings performance contracting, and utility project financing. (You may order a free videocassette of each of the FY 2000 telecourse modules, which included: Energy Fundamentals; Mechanical and Electrical Systems; Fuel Supply and Pricing; Energy Accounting and Analysis; and Conservation Opportunities. Please email your order to: [deisemann@mcneiltech.com](mailto:deisemann@mcneiltech.com))
- Don't forget to consult FEMP's *Training Event Locator*, now on the Web, for non-FEMP training.

##### Step 2: Energy Efficient Products Information

- **Buying Energy Efficient Products Course:** provides guidelines for selecting products that exceed the energy efficiency requirements of EPACT and Executive Order 12902. The E.O. 13123 directs agencies to maximize the use of energy-efficient products. This course is also available via satellite broadcast.

Step 3: Updates on Utility Restructuring

- Electric Utility Restructuring Course: learn how to choose the best energy service and project assistance options in the restructured retail electric utility industry.

Step 4: Cost-Savings Optimization Training

- Life-Cycle Costing Course: all Federal energy and water improvements must be analyzed for life-cycle cost effectiveness. Get the greatest energy and water savings by using the new Windows-based Building Life-Cycle Costing (BLCC5) software.

Step 5: O&M Opportunities Training

- Operations and Maintenance Management Course: find out how to gain better control of your day-to-day facility management and implement specific high payback procedures and energy conservation measures. You will need no additional resources to reap large near-term savings from this course.

Step 6: Integrated Design Training

- Designing Low-Energy, Sustainable Buildings Course: plan up-front how to effectively integrate passive solar design, energy conservation and renewable energy options.

Step 7: Energy Simulation Tool Training

- *FEDS 4.1* Workshop: incorporates software for analyzing conservation options in single or multiple buildings at a single site.

Step 8: Specific Technology Training

- FEMP Lights Course: targets another major conservation opportunity for Federal facility management.
- Implementing Renewable Energy Projects Workshop has optional modules for your objectives: passive and active solar; remote power; and backup through photovoltaic and wind systems.
- Laboratories for the 21<sup>st</sup> Century provides a forum for lab building design and operation incorporating renewable energy technologies and energy efficiency.
- Water Resource Management Course: how to measure and manage your sites' water usage to obtain water, energy, cost, and quality-of-life benefits.

Step 9: Project Financing/Contracting Training

- The "Energy Savings Performance Contracting (Customized)" and "Super ESPC" courses focus on obtaining private sector funding to accomplish energy improvements. We recommend that a procurement specialist and a technical specialist attend the ESPC and Super ESPC workshops together as a team. Legal, management and other specialists on your team are welcome.
- The Utility Project Financing Course explores all the information you need to know about alternative financing options available through utilities. We also recommend that a procurement specialist and a technical specialist attend this course as a team.
- Start learning right away by using the FEMP Web site procurement guidance. Financing orientation and training are also available via video disks and satellite broadcasts. Please refer to page 11.

### ***Recommended Steps for Contracting Specialists***

#### **Step 1: Energy Efficient Products Information**

- Buying Energy Efficient Products Course: provides guidelines for selecting products that exceed the energy efficiency requirements of EPACT and Executive Order 12902. The E.O. 13123 directs agencies to maximize the use of energy-efficient products. This course is also available via satellite broadcast.

#### **Step 2: Updates on Utility Restructuring**

- Electric Utility Restructuring Course: learn how to choose the best energy service and project assistance options in the restructured retail electric utility industry.

#### **Step 3: Project Financing Training**

- The “Energy Savings Performance Contracting (Customized)” and “Super ESPC” courses focus on obtaining private sector funding to accomplish energy improvements. We recommend that a procurement specialist and a technical specialist attend the Energy Savings Performance Contracting and Super ESPC together as a team. Legal, management and other specialists on your team are welcome.
- The Utility Project Financing Course explores all the information you need to know about alternative financing options available through utilities. We also recommend that a procurement specialist and a technical specialist attend this course as a team.
- Start learning right away by using the FEMP Web site procurement guidance. Financing orientation and training are also available via video disks and satellite broadcasts. Please refer to page 11.

### ***What is the Statutory Basis for FEMP Training?***

For detailed information on how FEMP training relates to the Executive Order 13123, the Energy Policy Act of 1992 “Trained Energy Manager” and other requirements for agencies, please refer to the Appendix in the last section of this Catalog.

## CHRONOLOGY OF FEMP FY 2001 TRAINING

Classroom workshops have yet to be scheduled for Laboratories for the 21<sup>st</sup> Century, and another Introduction and Advanced FEDS. Workshops are scheduled upon request for Super ESPC, Implementing Renewable Energy Projects, FEMP Lights (Advanced), and Buying Energy Efficient Products. Please check the FEMP Web site for frequent updates: [www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)

<i><b>Date</b></i>	<i><b>Event</b></i>	<i><b>Location</b></i>
<b>2000</b>		
September 6-8	Laboratories for the 21 <sup>st</sup> Century	San Francisco, CA
Sep. 12 – Dec. 11	FEMP Lights (Web Course)	
September 27-28	International Energy & Environmental Cong. (FEMP Symposia)	Milwaukee, WI
Fall (Date TBD)	Designing Low-Energy, Sustainable Buildings	Seattle, WA
October 17	Electric Utility Restructuring	Los Angeles, CA
October 17-18	Utility Project Financing	Los Angeles, CA
October 23-24	Super ESPC	Atlanta, GA
October 24-25	Life-Cycle Costing (Basic)	Denver, CO
October 25-27	World Energy Engineering Congress (FEMP Symposia)	Atlanta, GA
<b>2001</b>		
Jan. 8 – March 16	FEMP Lights (Web Course)	
January (Date TBD)	Electric Utility Restructuring & Utility Project Financing	Golden, CO
February 5-6	Operations and Maintenance Management	Honolulu, HI
February 7	Introduction to Facility Energy Decision System (FEDS)	Honolulu, HI
February 8-9	Advanced Facility Energy Decision System (FEDS)	Honolulu, HI
March 6	Revised Energy Management Telecourse: Part 1 (EO 13123 Update; Life-Cycle Costing – Basic; Buying Energy Efficient Products)	
March 13	Revised Energy Management Telecourse: Part 2 (Operations and Maintenance Management; Water Resource Management)	
March 20	Revised Energy Management Telecourse: Part 3 (Energy Savings Performance Contracting; Utility Project Financing)	
March 29-30	GLOBALCON 2001 (FEMP Symposia)	Atlantic City, NJ
April 10-11	Water Resource Management	Albuquerque, NM
April 23-25	Solar Energy Forum (FEMP Symposia)	Washington, DC
April 26-27	Designing Low-Energy, Sustainable Buildings	Washington, DC
April (Date TBD)	Electric Utility Restructuring & Utility Project Financing	Washington, DC
May 9-10	West Coast Energy Management Cong. (FEMP Symposia)	San Diego, CA
June 4-6	Energy 2001 (FEMP Symposia)	Kansas City, MO
June 12-13	Life-Cycle Costing (Project Oriented)	Rockville, MD
June 25 – Aug. 31	FEMP Lights (Web Course)	
June (Date TBD)	Designing Low-Energy, Sustainable Buildings	Atlanta, GA
July (Date TBD)	Electric Utility Restructuring & Utility Project Financing	Chicago, IL
August 22-23 ( <i>tent.</i> )	International Energy & Environmental Cong. (FEMP Symposia)	Cleveland, OH
October 24-26	World Energy Engineering Congress (FEMP Symposia)	Atlanta, GA

## **FEMP FY 2001 DISTANCE LEARNING TRAINING SCHEDULE**

(Please refer to next page for classroom workshops.)

### **Web-Based Courses**

- **FEMP Lights**

Fall Quarter: September 12 - December 11, 2000

Winter Quarter: January 8 - March 16, 2001

Summer Quarter: June 25 - August 31, 2001

**Contact:** Edmonds Community College, 425-640-1010; [www.edcc.edu](http://www.edcc.edu)

- **Designing Low-Energy, Sustainable Buildings**

Date to be determined

**Contact:** Ellen Larson, 202-628-7400, Ext. 211

### **Telecourses**

- **March 6: Revised Energy Management Telecourse - Part 1**

EO 13123 Update; Life-Cycle Costing – Basic; Buying Energy Efficient Products

- **March 13: Revised Energy Management Telecourse - Part 2**

Operations and Maintenance Management; Water Resource Management

- **March 20: Revised Energy Management Telecourse - Part 3**

Energy Savings Performance Contracting; Utility Project Financing; Electric Utility Restructuring

**Contact:** Shirley Pridemore at 423-369-3453 or Heather Schoonmaker at 865-777-9869, or register online at: [www.energyworkshops.org/femp](http://www.energyworkshops.org/femp)



## FEMP FY 2001 CLASSROOM TRAINING SCHEDULE

(Please see previous page for distance learning training schedule)

Changes do occur throughout the year – please check [www.eren.doe.gov/femp](http://www.eren.doe.gov/femp) for frequent updates.

<b>WORKSHOP</b>	<b>Operations &amp; Maintenance Management</b>	<b>Introduction to Facility Energy Decision System**</b>	<b>Advanced Facility Energy Decision System**</b>	<b>Water Resource Management</b>	<b>Life-Cycle Costing</b>	<b>Designing Low-Energy, Sustainable Buildings</b>
<b>COURSE CONTACT</b>	<b>Nicole Roy 509-372-4368</b>					<b>Ellen Larson 202-628-7400, Ext. 211</b>
<b>October 24-25, 2000</b>					Denver, CO (Basic)	
<b>February 5-6, 2001</b>	Honolulu, HI*					
<b>February 7</b>		Honolulu, HI*				
<b>February 8-9</b>			Honolulu, HI*			
<b>April 10-11</b>				Albuquerque, NM		
<b>April 26-27</b>						Washington, DC
<b>June 12-13</b>					Rockville, MD (Project-Oriented)	

<b>WORKSHOP</b>	<b>Super ESPC and ESPC</b>	<b>Electric Utility Restructuring</b>	<b>Utility Project Financing</b>	<b>Buying Energy Efficient Products</b>	<b>Laboratories for the 21<sup>st</sup> Century</b>	<b>Implementing Renewable Energy Projects</b>
<b>COURSE CONTACT</b>	<b>FEMP Workshop Hotline 703-243-8343</b>					
	<i>Please check the FEMP Web site for schedule updates</i>					
<b>September 6-8, 2000</b>					San Francisco, CA	
<b>October 17</b>		Los Angeles, CA*				
<b>October 17-18</b>			Los Angeles, CA*			
<b>October 23-24</b>	Atlanta, GA					

\* Denotes "FEMP University", two or more courses at the same location

\*\* A second session of FEDS courses will be co-sponsored by FEMP and DOE's Rebuild America Program, and will be tailored accordingly.

## SUMMARY SCHEDULES

### FEMP-SPONSORED SYMPOSIA AT NATIONAL CONFERENCES

These events offer excellent opportunities for the entire Federal energy and water management community to meet face-to-face and exchange information. The community includes not only representatives of Federal agencies, but also energy managers from state and local governments, private-sector suppliers of equipment and services, and representatives from utilities and non-profit institutions. FEMP draws upon this community to organize and conduct seminars on timely energy and water management topics. Federal employees are encouraged to call 703-243-8343, to be considered for a limited supply of free registrations for some of these events.

CONFERENCES WITH FEMP SYMPOSIA							
CONFERENCE DATES	WEEC 2000	GLOBALCON 2001	Solar Energy Forum	West Coast EMC	Energy 2001	IEEC 2001	WEEC 2001
OCTOBER 25-27, 2000	Atlanta, GA						
MARCH 29-30, 2001		Atlantic City, NJ					
APRIL 23-25, 2001			Washington, DC				
MAY 9-10, 2001				San Diego, CA			
JUNE 4-6, 2001					Kansas City, MO		
AUGUST 22-23, 2001 (Tentative)						Cleveland, OH	
OCTOBER 24-26, 2001							Atlanta, GA

#### Definition of conference acronyms:

WEEC: World Energy Engineering Congress (sponsored by the Association of Energy Engineers)  
 GLOBALCON: Global Conservation (sponsored by the Association of Engineers)  
 Solar Energy Forum: Jointly sponsored by the Solar Energy Industries Association and the American Solar Energy Society  
 West Coast EMC: West Coast Energy Management Congress (sponsored by the Association of Energy Engineers)  
 Energy 2001: Sponsored by FEMP; co-sponsored by GSA and US Department of Defense  
 IEEC: International Energy and Environmental Congress (sponsored by the Association of Energy Engineers)

*For information and registration, please call 703-243-8343. Be sure to ask for FEMP registration discounts.*

## OTHER IMPORTANT CONFERENCES

- **ACEEE - 2000 Summer Study on Energy Efficiency in Buildings**

August 20-25, 2000 – Pacific Grove, CA

Information: Phone 202-429-0063, or go to [www.aceee.org](http://www.aceee.org)

- **National Association of Energy Service Companies 17<sup>th</sup> Annual Conference**

November 15-17, 2000 – Palm Springs, CA

Information: Phone 202-822-0954, or go to [www.naesco.org](http://www.naesco.org)

- **2001 ASHRAE Winter Meeting and AHR Expo**

January 27-31, 2001 – Atlanta, GA

Information: Phone 404-636-8400, or go to [www.ashrae.org](http://www.ashrae.org)

- **ACEEE - 2001 Summer Study on Energy Efficiency in Industry**

July 24-27, 2001 - Tarrytown, NY

Information: go to [www.aceee.org](http://www.aceee.org)

## **“FEMP UNIVERSITY” MULTIPLE COURSE SESSIONS**

**“FEMP University”** “FEMP University” is a collection of two or more FEMP workshops grouped together to allow students to stretch their travel dollars. The sessions are held back-to-back at a single training site. These sessions are indicated as footnotes on respective workshop description pages.

### **October 17-18, 2000**

### **Los Angeles, CA**

Electric Utility Restructuring  
Utility Project Financing

October 17 (half-day)  
October 17-18

Other Electric Utility Restructuring and Utility  
Project Financing workshops to be offered in  
FEMP University format:

January 2001 – Golden, CO  
April 2001 – Washington, DC  
July 2001 – Chicago, IL

*Please check the  
FEMP Web site for  
schedule updates  
[www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)  
[p](#)*

### **February 5-9, 2001**

### **Honolulu, HI**

Operations and Maintenance Management  
Introduction to Facility Energy Decision System  
Advanced Facility Energy Decision System

February 5-6  
February 7  
February 8-9

## SELF-INSTRUCTION – VIDEO AND WEB TRAINING RESOURCES

### **FEMP Telecourse Web Material**

For each of FEMP's most recent 2-hour telecourse modules (listed below), course slides and pre- and post-course information, including links to valuable reference materials on FEMP's Web site, can be found at: [www.energyworkshops.org/femp](http://www.energyworkshops.org/femp)

#### **FY 2000 Energy Management Telecourse**

- Module 1: Energy Fundamentals; Mechanical Systems; Electrical Systems
- Module 2: O&M Management; Energy Codes and Standards; Fuel Supply and Pricing; Energy Accounting and Analysis
- Module 3: Energy Savings Performance Contracting; Buying Energy Efficient Products
- Module 4: Life-Cycle Costing (Basic); Water Resource Management; Energy Conservation Opportunities

### **FEMP Telecourse Video Cassettes**

You may order a free videocassette of each of the satellite broadcasts of the telecourse modules listed above.

Please email your order to [deisemann@mcneiltech.com](mailto:deisemann@mcneiltech.com), including shipping information.

### **Special ESPC Orientation, Web Documentation and Videos**

- To obtain a copy of the Energy Savings Performance Contracting (ESPC) student guide and model solicitation, please call 1-800-DOE-EREC. These documents are also available on the FEMP Web site at [www.eren.doe.gov/femp/financing/espc\\_model.html](http://www.eren.doe.gov/femp/financing/espc_model.html)
- To obtain the FEMP videos on ESPC enabling legislation and the ESPC Information Tape, please call 1-800-DOE-EREC, or order them online at [www.eren.doe.gov/femp/ordermaterials.html](http://www.eren.doe.gov/femp/ordermaterials.html)
- If your training travel budgets are limited, FEMP has developed a video-based training program that walks the potential ESPC candidate through the ESPC process. The **ESPC Video Training Program** and Manual are available by calling 1-800-DOE-EREC.

### **Special Life-Cycle Costing Training Videos**

With support from the Department of Energy, the National Institute of Standards and Technology's Office of Applied Economics has produced three videos of interest to Federal energy managers and others concerned with using economic analyses to improve the long-term economy of buildings.

- ***Life-Cycle Costing: Least-Cost Energy Decisions*** - the first in the series, demonstrates how to apply the life-cycle cost method to decisions affecting energy consumption in buildings. Running time: 60 minutes.
- ***Uncertainty and Risk: Least-Cost Energy Decisions for Buildings*** - the second video produced, provides the fundamentals for measuring, describing, and interpreting uncertainty and risk in economic evaluations of energy-conservation projects. Running time: 36 minutes.
- ***Choosing Economic Evaluation Methods: Least-Cost Energy Decisions in Buildings*** - the newest video in the series, provides information on how to select among economic methods such as life-cycle costing and the savings-to-investment ratio when evaluating energy-conservation projects.

Workbooks that support the videos are also available. For information on obtaining videos and workbooks, contact:

Video Transfer, Inc.  
5709-B Arundel Avenue  
Rockville, MD 20852  
Telephone: 301-881-0270

### **TeleFEMP Videos**

Alternative financing, including Energy Savings Performance Contracting and Utility Project Financing, as well as new technology applications have been the major themes of seven live, interactive video teleconferences. Guidance is provided by public and private sector experts, and case studies are presented. To obtain free copies of these video broadcasts, please call 1-800-DOE-EREC, or order them online at: [www.eren.doe.gov/femp/ordermaterials.html](http://www.eren.doe.gov/femp/ordermaterials.html)

### **Other Videos**

Copies of "Energy Efficiency in Federal Facilities" and the TeleFEMP Broadcasts may be obtained through the Energy Efficiency and Renewable Energy Clearinghouse, 1-800-DOE-EREC, or order them online at: [www.eren.doe.gov/femp/ordermaterials.html](http://www.eren.doe.gov/femp/ordermaterials.html)

### **CD-ROMs**

"Agency Success Stories" - To obtain copies of this CD-ROM, please call 1-800-DOE-EREC, or order them online at: [www.eren.doe.gov/femp/ordermaterials.html](http://www.eren.doe.gov/femp/ordermaterials.html)

## SPECIAL OPPORTUNITIES BEYOND THIS CATALOG

### **Measurement and Verification Instructional Tool**

The Pacific Northwest National Laboratory (PNNL) is in the process of developing a CD-based Monitoring and Verification (M&V) Instructional Tool for Federal employees. The focus of the tool is generic M&V - including performance contracting, metering for internally implemented energy projects, and O&M-related needs. The first few chapters provide a basic introduction to M&V and are heavily weighted on practical or application sections. At any point, the user can "drill down" to more technical detail, case studies, and access links to other Internet resources. This is an instructional tool meant to work in unison with the current M&V protocols and guidelines. It is intended to be distributed by PNNL and be available as a take-home item from relevant FEMP workshops.

The tool will be released this fall and made available for the Alliance to Save Energy's Metering Workshop in Atlanta on October 24th, prior to the World Energy Engineering Congress (WEEC). For more information on the Metering Workshop, phone 202-857-0666. The workshop is free, but reservations are appreciated. For more details on obtaining the M&V Instructional Tool, contact Nicole Roy at PNNL at 509-372-4750. For technical questions about the tool, contact William Chvala, Jr. at 509-372-4558.

### **ENERGY STAR® Buildings Program**

For Federal building activities and services, please access: [www.epa.gov/buildings/federal](http://www.epa.gov/buildings/federal)

This site provides information on the ENERGY STAR® Benchmarking Tool, how to qualify a building for the ENERGY STAR® label, and more.

A four-hour classroom course, currently being considered, will provide step by step instruction on using the ENERGY STAR® Benchmarking Tool within the ENERGY STAR®'s Portfolio Manager to benchmark the energy performance of occupied buildings, generate a benchmarking score, and identify opportunities for energy efficiency upgrades. The training would include instruction on how to use the tool, read the Statement of Energy Performance, monitor results of efficiency upgrades, and record dollar and greenhouse gas emissions savings as a result of upgrades. Handouts would include a data collection template for gathering and formatting the data required to benchmark a building, sample building exercises, and annotated screen captures with tips and instruction. For more information on the status of the development of this training, please contact: [Dyer.Beverly@epamail.epa.gov](mailto:Dyer.Beverly@epamail.epa.gov).

### **Building Commissioning**

To address the requirements of Executive Order 13123, FEMP, in cooperation with GSA, has developed the draft *Building Commissioning Guide*. Access the document at:

[www.eren.doe.gov/femp/techassist/bldgcomgd.html](http://www.eren.doe.gov/femp/techassist/bldgcomgd.html)

For information on training and conferences dealing with building commissioning sponsored by Portland Energy Conservation, Inc. (PECI), please access: [www.peci.org](http://www.peci.org)

### **Cool \$ense Workshop**

Agencies with an interest in building energy efficiency should consider organizing a workshop to promote integrated chiller retrofits. These retrofits can save money and energy and increase the asset value of your area's buildings.

A workshop planning guide has been put together to help you with logistics, programming and marketing strategies. Find this guide along with other information at the Cool \$ense Web site:

[http://ateam.lbl.gov/cool\\$ense/](http://ateam.lbl.gov/cool$ense/)

### **Combined Heat and Power**

To address the requirements of Executive Order 13123, Section 403(g), FEMP has developed "Combined Heat and Power: A Federal Manager's Reference Guide". For more information, and to download the Guide please refer to FEMP's Web page at:

[www.eren.doe.gov/femp/resources/chpguide.html](http://www.eren.doe.gov/femp/resources/chpguide.html)

### **Alternative Fuel Vehicle Training**

The National Alternative Fuels Training Consortium strives to improve air quality and decrease the dependence on foreign oil by promoting, supporting, and expanding the use of alternative fuel vehicles. They develop and deliver standard, competency-based training for automotive trainers, technicians, and others in the alternative fuel vehicle field, and educate the consumer about alternative fuel vehicles.

This Consortium currently operates a network of National Training Centers (NTCs) in 14 states. Over 2,000 technicians have been trained from over 50 industry, academic, and governmental organizations. The US Postal Service, the US Air Force, Clean Cities Programs, and private fleets are users of training materials from the Consortium.

National Training Centers' contact information and curricula are available at:

<http://naftp.nrcce.wvu.edu/ntc/ntcintro.html>

### **Clean Energy for the 21<sup>st</sup> Century**

For information on the Department of Energy's *Clean Energy for the 21st Century* program, please refer to: [www.eren.doe.gov/cleanenergy](http://www.eren.doe.gov/cleanenergy)



## FAX-BACK REGISTRATION INFORMATION FORM

To receive registration information for any of the following FEMP workshops, please copy this page, complete the requested information, and fax to the appropriate number below, or register online using the addresses listed below.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Agency/Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Please check the box(es) of the workshop(s) you are considering attending:

### Workshop

### Fax to:

<b>Energy Management Telecourse</b>	<input type="checkbox"/> Part 1 - March 6, 2001 <input type="checkbox"/> Part 2 - March 13, 2001 <input type="checkbox"/> Part 3 - March 20, 2001	<b>423-369-3437,</b> or register online at: <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>
<b>Designing Low-Energy, Sustainable Buildings</b>	<input type="checkbox"/> Fall 2000 (Date TBD) – Seattle, WA <input type="checkbox"/> April 26-27, 2001 – Washington, DC <input type="checkbox"/> June (Date TBD) – Atlanta, GA <input type="checkbox"/> Date TBD – Web-based course	<b>202-393-5043</b>
<b>FEMP Lights</b>	<input type="checkbox"/> Sept. 12 - Dec. 11, 2000 <input type="checkbox"/> Jan. 8 - March 16, 2001 <input type="checkbox"/> June 25 - Aug. 31, 2001	<b>425-640-1704,</b> or register online at: <a href="http://www.cce.edcc.edu/femp">www.cce.edcc.edu/femp</a>
<b>Super ESPC</b> <b>Electric Utility Restructuring</b> <b>Utility Project Financing</b> <b>Implementing Renewable Energy Projects</b> <b>Laboratories for the 21<sup>st</sup> Century</b> <b>Buying Energy Efficient Products</b>	<input type="checkbox"/> Oct. 23-24, 2000 – Atlanta, GA <input type="checkbox"/> Oct. 17, 2000 – Los Angeles, CA <input type="checkbox"/> Oct. 17-18, 2000 – Los Angeles, CA <input type="checkbox"/> Date and location to be announced <input type="checkbox"/> Sept. 6-8, 2000 – San Francisco, CA <input type="checkbox"/> Date and location to be announced	<b>703-243-8063</b>  Dates and locations have yet to be announced for some of these workshops. Please check the FEMP Web site for updates: <a href="http://www.eren.doe.gov/femp">www.eren.doe.gov/femp</a>
<b>Operations &amp; Maintenance Management</b> <b>Introduction to Facility Energy Decision System (FEDS)</b> <b>Advanced Facility Energy Decision System (FEDS)</b> <b>Water Resource Management</b> <b>Life-Cycle Costing (Classroom)</b>	<input type="checkbox"/> Feb. 5-6, 2001 – Honolulu, HI <input type="checkbox"/> Feb. 7, 2001 – Honolulu, HI <input type="checkbox"/> Feb. 8-9, 2001 – Honolulu, HI <input type="checkbox"/> April 10-11, 2001 – Albuquerque, NM <input type="checkbox"/> Oct. 24-25, 2000 – Denver, CO (Basic) <input type="checkbox"/> June 12-13, 2001 – Rockville, MD (Project-Oriented)	<b>509-372-4990,</b>  or register online at: <a href="http://www.pnl.gov/femp">www.pnl.gov/femp</a>

## FEMP SUPER ESPC (Energy Savings Performance Contracts)

OPEN ONLY TO GOVERNMENT PERSONNEL

<b>Capsule Description</b>	This workshop is for agencies that wish to consider participation in the FEMP Super ESPC regional IDIQ contract. To help streamline the procurement process, agencies are able to issue delivery orders off of regional contracts or specific technologies.
<b>Course Length</b>	1 ½ days
<b>Fees</b>	\$195 per person or two-person technical and contracting team; \$50 for each additional team member.
<b>Prerequisites</b>	None, however it is strongly recommended that participants view the ESPC Video Training Program. (Please see “Special ESPC Orientation and Web Resources” on page 11.) Attendees should be part of a team that includes procurement and technical specialists.
<b>Course Contents</b>	Overview of the regional Super ESPC contract; preparation of technical portfolios; review of delivery order requirements; and evaluation of proposals.
<b>Who Should Attend</b>	Energy Managers, or facility technical and procurement personnel. Due to discussion of procurement-sensitive information, <i>the workshop is open only to government personnel</i> .
<b>Benefits to You</b>	This workshop helps you learn what you need to do to implement your project through Super ESPC, which streamlines the procurement process in ESPC.
<b>Instructors</b>	Regional experts from the US Department of Energy, National Renewable Energy Laboratory, Oak Ridge National Laboratory, and Lawrence Berkeley National Laboratory.
<b>Contact</b>	For registration information, contact the FEMP Workshop Hotline at 703-243-8343. For agency customized workshops, contact your DOE Regional Office (see listing on page 39).

<b>FY 2001 Schedule</b>
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October 23-24, 2000
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Atlanta, GA
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(For an up-to-date schedule, please refer to the FEMP Web site at [www.eren.doe.gov/femp/financing/wrkshop.htm](http://www.eren.doe.gov/femp/financing/wrkshop.htm))

**ENERGY SAVINGS PERFORMANCE CONTRACTING (ESPC)  
(Classroom and Telecourse)**

<b>Capsule Description</b>	These classroom workshops are customized to meet the alternative financing needs of agencies in implementing energy conservation projects. Attendance by other agencies is arranged as appropriate. (If you do not have a specific project planned, we recommend that you obtain the documentation and videos described on page 11, or join the Telecourse.)
<b>Course Length</b>	2 days (Telecourse: 2 hours at your downlink site.)
<b>Fees</b>	\$195 per person or two-person technical and contracting team; \$50 for each additional team member. (Telecourse downlink costs and other site-specific costs are covered by local sponsors, who may pass on their costs to attendees.)
<b>Prerequisites</b>	<i>Customized Classroom Course:</i> Attendees should be part of a team that includes procurement and technical specialists who have a basic understanding of energy savings performance contracting and a minimum of three projects identified for discussion. Minimum attendance is 25 people. <i>Telecourse:</i> Pre-class study material is made available via Web site.
<b>Course Contents</b>	Design and preparation of ESPC solicitations (for agency single-site contracts or agency regional Super ESPCs as requested); evaluation of proposals; implementation of contracts; case studies; specific project assistance. As applicable, the workshop is customized to meet the agency's needs in reviewing and examining other alternative financing options such as utility incentive programs and opportunities, and partnerships with local utilities.
<b>Who Should Attend</b>	Headquarters, legal, procurement and technical personnel, and program managers. <i>Due to discussion of procurement-sensitive information, the classroom workshop is open only to government personnel.</i>
<b>Benefits to You</b>	Workshop helps enable you to meet EPACT* goals and provides you with tools to help you obtain private sector financing for energy projects when agency funds are limited, or when you need to leverage agency and utility funds. Attendees receive model solicitations and procurement documents.
<b>Instructors</b>	Experts from the US Department of Energy, Oak Ridge National Laboratory, National Renewable Energy Laboratory, and Lawrence Berkeley National Laboratory.
<b>Contact</b>	To inquire about a customized workshop for your agency or to attend one, contact your DOE Regional Office (see listing on page 39). Contact information is also available by calling the FEMP Workshop Hotline at 703-243-8343. Telecourse: To register, contact Shirley Pridemore at 423-369-3453 or Heather Schoonmaker at 865-777-9869, or register online at: <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>
<b>FY 2001 Schedule</b>	Please contact your DOE Regional Office for a customized workshop. See "Revised Energy Management Telecourse" on page 20.

## UTILITY PROJECT FINANCING (Classroom and Telecourse)

<b>Capsule Description</b>	This course offers an overview of the project financing options available through utilities. Information is provided to assist facility managers and contracting officers in understanding the options available to contract with utilities for implementation of energy and water saving projects.
<b>Course Length</b>	1 ½ days
<b>Fee</b>	Sponsored by a local utility or agency – tuition fees waived.
<b>Prerequisites</b>	None. Attendees are strongly encouraged to bring questions about their projects for discussion.
<b>Course Contents</b>	<p>Covers areawide contracts, basic ordering agreements, agency-specific agreements and site-specific agreements. Each type of agreement is discussed with samples available. Also covers authorities, regulations and policies that must be adhered to, and the impacts of utility industry restructuring. It provides “how-to’s” for utility contracting, including questions to ask your utility and a step-by-step guide through the contracting process. Also included are basic financing principles, negotiation tips, proposal review guidelines, case studies, and specific project assistance.</p> <p>As applicable, specific utility programs available to the workshop participants may be discussed, and a working session with a utility representative may be included on available programs and services.</p>
<b>Who Should Attend</b>	Facility energy managers, agency contracting officers, regional or upper level energy managers, legal staff, or any management and other members of the team that need to gain an understanding of utility contracting for energy conservation projects.
<b>Benefits to You</b>	This course provides you with tools to help you obtain utility financing for energy projects when agency funds are limited, or when you need to leverage agency funds. Attendees receive sample documents and a step-by-step guide to completing utility contracts for energy conservation projects.
<b>Instructors</b>	Mary Colvin, Karen Thomas, Chandra Shah, and Millard Carr, National Renewable Energy Laboratory.
<b>Contact</b>	FEMP Workshop Hotline, 703-243-8343.

FY 2001 Schedule	
October 17-18, 2000	Los Angeles, CA*
March 20, 2001	Telecourse
January 2001	Golden, CO*
April 2001	Washington, DC*
July 2001	Chicago, IL*

\* Same place, same week:  
Electric Utility Restructuring

October 17, 2000

Please refer to the FEMP Web site ([www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)) for schedule updates.

## ELECTRIC UTILITY RESTRUCTURING

<b>Capsule Description</b>	<p>This course addresses the questions: How is restructuring being implemented elsewhere? What are the plans for my region? How is it working elsewhere? What should I expect? How should I prepare? How do I prepare an RFP? How do I select a reliable vendor?</p> <p>Status reports are presented on electric utility industry restructuring at the state and Federal level and associated changes in procurement guidelines. Review of potential procurement options, including products and services and general procurement mechanisms. The focus is on setting up for competitive power procurements.</p>
<b>Course Length</b>	½ day
<b>Fee</b>	Sponsored by a local utility or agency – tuition fees waived.
<b>Prerequisites</b>	Be prepared to ask questions you may have about how electric utility deregulation may affect your facility.
<b>Course Contents</b>	<p>Electric industry restructuring is underway in over 16 states. It is coming to all states soon. Radical changes in electricity markets and purchasing options accompany deregulation of electricity markets. This course reviews the current situation with specific emphasis on activities in the local area. It describes how deregulation was implemented elsewhere and how it impacted representative consumers' choices and energy bills. It also looks to the future to identify emerging trends.</p> <p>Also included: specific information on the status of deregulation locally and at the Federal level, examples of competitive RFPs and lessons learned from other regions, guidelines for how to prepare for an RFP and how to select reliable vendors.</p>
<b>Who Should Attend</b>	Facility and energy managers, procurement and contract staff.
<b>Benefits to You</b>	Preparation for competitive procurement of electricity and other energy services in a competitive business environment. This course provides specifics about power procurement in your region including new products and services that may be available.
<b>Instructor</b>	Mike Warwick and Mike Baechler, Pacific Northwest National Laboratory
<b>Contact</b>	FEMP Workshop Hotline, 703-243-8343

FY 2001 Schedule	
October 17, 2000	Los Angeles, CA*
January 2001	Golden, CO*
April 2001	Washington, DC*
July 2001	Chicago, IL*

\* Same place, same week:  
Utility Project Financing

October 17-18, 2000

Please refer to the FEMP Web site ([www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)) for schedule updates.

## REVISED ENERGY MANAGEMENT TELECOURSE

<b>Capsule Description</b>	This course is presented using state-of-the-art distance learning technology. The information presented is designed to assist facility management personnel in achieving EPACT and E.O. 13123* objectives for energy and water savings, and alternative financing. This course has been revised from its previous format.
<b>Course Length</b>	5 hours per day for 3 days at your downlink site.
<b>Fees</b>	Downlink costs and other site-specific costs are covered by local sponsors, who may pass on their costs to attendees.
<b>Prerequisites</b>	Pre-class study materials are made available via the Internet.
<b>Course Contents</b>	There are modules for life-cycle costing, energy savings performance contracting, utility project financing, electric utility restructuring, water resource management, and energy conservation opportunities in purchasing, maintenance and design areas. Using a live, interactive format, brief lectures will be followed by live question and answer sessions, problem solving and Web references for after-class use.
<b>Who Should Attend</b>	Energy managers responsible for daily operation of facilities (including building managers, demand-side utility managers, government planners, and others) and related contracting and management personnel.
<b>Benefits to You</b>	Completion of these workshops helps agency personnel achieve and maintain energy and cost savings from practical, technologically feasible, and economically sound energy conservation measures.
<b>Instructors</b>	Brad Gustafson, FEMP; Linde Fuller, National Institute of Standards and Technology; Phil Coleman, Lawrence Berkeley National Laboratory; Patrick Hughes, Oak Ridge National Laboratory; Kate McMordie-Stoughton and Ray Pugh, Pacific Northwest National Laboratory.
<b>Contact</b>	For registration information, contact Shirley Pridemore at 423-369-3453 or Heather Schoonmaker at 865-777-9869, or register online at: <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>

FY 2001 Schedule	
<u>Date</u>	<u>Module</u>
March 6	Part 1: EO 13123 Update; Life-Cycle Costing – Basic; Buying Energy Efficient Products
March 13	Part 2: Operations and Maintenance Management; Water Resource Management
March 20	Part 3: Energy Savings Performance Contracting; Utility Project Financing

## BUYING ENERGY EFFICIENT PRODUCTS (Classroom and Telecourse)

<b>Capsule Description</b>	Specifics are presented on how to meet Executive Order 13123's requirement to purchase ENERGY STAR® products, and products in the top 25% of energy efficiency (for products not covered by ENERGY STAR®).
<b>Course Length</b>	½ day classroom course - <i>may be arranged upon request.</i> (Telecourse: 2 hours at your downlink site.)
<b>Fee</b>	\$45 per person (There is no cost for the telecourse. Telecourse downlink costs and other site-specific costs are covered by local sponsors who may pass on their costs to attendees.)
<b>Prerequisites</b>	None (Telecourse: Pre-class study materials are made available via the Internet.)
<b>Course Contents</b>	Executive Order 13123 directs Federal agencies to purchase ENERGY STAR®-labeled products, or products among the 25% most energy-efficient as designated by FEMP (for those products not covered by ENERGY STAR®). Learn how to comply with these requirements by using FEMP's <i>Product Energy Efficiency Recommendations</i> . The <i>Recommendations</i> are easy-to-use one-sheet summaries that identify the complying efficiency levels for each product type. The <i>Recommendations</i> also provide cost-effectiveness guidance, buyer tips for proper selection and design, and information on how to acquire efficient models through Federal supply agencies (GSA and DLA).
<b>Who Should Attend</b>	Energy/facility managers and procurement/contract specialists responsible for making purchasing decisions for energy- and water-consuming products.
<b>Benefits to You</b>	Provides guidelines on complying with the Executive Order and additional resources to assist Federal buyers. Helps with selection and procurement of energy efficient products that save energy and money for your facility. Participants receive a copy of the <i>Product Energy Efficiency Recommendations</i> , as well as all future updates.
<b>Instructors</b>	Phil Coleman, Lawrence Berkeley National Laboratory
<b>Contact</b>	Please call Katie Kroehle McGervey, 202-586-4858 to arrange for a classroom course. Telecourse: to receive more course information, to register, or to sponsor or find a downlink location, please contact Shirley Pridemore at 423-369-3453 or Heather Schoonmaker at 865-777-9869, or register online at: <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>

FY 2001 Schedule	
March 6, 2001	Telecourse



## FEMP LIGHTS (Web Course)

<b>Capsule Description</b>	This comprehensive ten-week class is offered over the Internet, combining a class Web page and e-mail. Photographs, diagrams and animated text provide a lively and highly visual medium to learn about all aspects of energy-effective lighting. Students download course materials from the Web site and likewise return homework assignments and quizzes to the instructor. A threaded discussion in the electronic classroom organizes class discussions, while e-mail is also available to provide a more immediate mode for student-teacher communication.
<b>Course Length</b>	10 weeks (one college quarter). Approximately 3-4 hours per week.
<b>Fee</b>	\$267, includes course registration, four texts, 3 units of college credit with Edmonds Community College (Seattle, WA) and shipping of the course texts within the continental US.
<b>Prerequisites</b>	No course prerequisites, but weekly access to the Internet and e-mail is necessary. Confidence with computer technology is advised. (Edmonds Community College offers distance learning courses on introductory computer and Internet use--recommended for any computer novices.)
<b>Certification:</b>	The FEMP Lights Web Course is certified by the NCQLP for 36 Lighting Education Units (LEUs), the full amount required for a three year LC re-certification. Students are also encouraged to use this course as a first step towards pursuing Lighting Certification (LC) with NCQLP. See <a href="http://www.ncqlp.org">www.ncqlp.org</a> for more information.
<b>Course Contents</b>	The course focuses on energy effective lighting for Federal buildings. It covers principles of good lighting; new lamps and ballasts; fixtures and controls technologies; energy and life-cycle analysis of lighting projects; selecting contractors; managing a lighting retrofit installation; using the FEMP Master Specification and other resources. A printed copy of the <i>Advanced Lighting Guidelines</i> , along with three other useful lighting resource books, are mailed to the students as their primary texts. In addition, students are shown how to use the lighting Web sites, other freely available resources, and exercises based on the students' own lighting experience to deepen their understanding of energy effective lighting.
<b>Who Should Attend</b>	The course is tailored to the needs of Federal personnel who are tasked with managing buildings, or lighting retrofit projects, or who want to learn more about the basics of lighting efficiency. Recent students include engineers, architects, project managers, and program managers. Non-federal personnel can take the course on a space-available basis.
<b>Instructors</b>	Lisa Heschong, architect; Jim Benya PE, FIES
<b>Contact</b>	For more information about the course, and to register, visit: <a href="http://www.cce.edcc.edu/femp">www.cce.edcc.edu/femp</a> or call Edmonds College Distance Learning Center at 425-640-1010. The lead instructor, Lisa Heschong, can be reached at <a href="mailto:lheschong@h-m-g.com">lheschong@h-m-g.com</a>

### FY 2001 Schedule

Fall Quarter: September 12 - December 11, 2000  
 Winter Quarter: January 8 - March 16, 2001  
 Summer Quarter: June 25 - August 31, 2001



**FEMP LIGHTS (Advanced)  
(Classroom Course)**

<b>Capsule Description</b>	The Advanced Workshop is designed for students who have mastered the basics of energy effective lighting, and are engaged in application specific challenges. The Workshop offers the opportunity to work with an expert illumination engineer on real world lighting problems. Students have the opportunity to try out various analysis tools and techniques. The Workshop can be tailored to specific needs.
<b>Course Length</b>	2 ½ days
<b>Fee</b>	\$195, includes course registration
<b>Prerequisites</b>	FEMP Lights Web Course, or permission of the instructors.
<b>Course Contents</b>	The instructor presents a variety of lighting case studies and the decision process necessary to achieve a successful project, including lighting, energy and economic analysis. Applications that combine high light quality and energy efficiency are stressed. Students are welcome to bring in challenges from their own experience for analysis.
<b>Who Should Attend</b>	The Advanced Workshop is designed for students who have completed the FEMP Lights Web Course, and are engaged in lighting projects.
<b>Instructors</b>	Jim Benya, PE; Nancy Clanton, PE; Lisa Heschong, architect
<b>Contact</b>	For more information about the course, or to arrange a tailored workshop, contact Lisa Heschong at <a href="mailto:lheschong@h-m-g.com">lheschong@h-m-g.com</a>
<b>FY 2001 Schedule</b>	Offered by agency request or special arrangement

**OPERATIONS AND MAINTENANCE MANAGEMENT \*\***  
(Classroom and Telecourse)

<b>Capsule Description</b>	Provides an overview of Operations and Maintenance (O&M) practices and management programs. Workshop is designed to provide guidance on developing the roles, responsibilities, and functions of key personnel within an O&M organization. Additionally, the workshop focuses on four major O&M practices (Reactive, Preventive, Predictive, and Reliability Centered) and presents information on O&M technologies and savings ideas.
<b>Course Length</b>	2 days (Telecourse: 2 hours at your downlink site.)
<b>Fee</b>	FREE
<b>Prerequisites</b>	None (Telecourse: Pre-class study materials are made available via the Internet.)
<b>Course Contents</b>	Definition of O&M; benefits of a strong O&M program; costs, risks and liability issues; types of maintenance programs (corrective, preventive, predictive); O&M infrastructure requirements; O&M organization integration; ideas for implementation of O&M; discussion of O&M tools.
<b>Who Should Attend</b>	Facility management staff; maintenance, engineering operations, training, and administration staff providing O&M services.
<b>Benefits to You</b>	Facility and O&M managers learn about proven O&M organizational structures, and are introduced to technologies and tools to optimize energy and dollar savings, reduce operations and fuel costs, lower maintenance and "downtime," and increase safety and reliability.
<b>Instructors</b>	Greg Sullivan, Ray Pugh, and Francis Buck, Pacific Northwest National Laboratory.
<b>Contact</b>	To register for classroom course, to receive more information on or register for the telecourse, or to sponsor or find a downlink site, contact Nicole Roy, 509-372-4368. Register online for the telecourse at <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>

FY 2001 Schedule	
February 5-6, 2001	Honolulu, HI***
March 13, 2001	Telecourse

\*\* A second three-day workshop is planned and will be co-sponsored by FEMP and DOE's Rebuild America Program.

\*\*\* Same place, same week:  
 Introduction to Facility Energy Decision System      February 7, 2001  
 Advanced Facility Energy Decision System      February 8-9, 2001

## DESIGNING LOW-ENERGY, SUSTAINABLE BUILDINGS (Classroom and Web-Based)

<b>Capsule Description</b>	The federal government has an unprecedented opportunity to set an example for better building design that pays enormous dividends for the nation through energy savings, dollars saved for other public services, and buildings that are healthier for their occupants and kinder to the environment. New buildings designed with a 'whole building' approach offer the opportunity to save energy and costs, often by simply "designing out" inefficiencies right from the start. If your agency is getting ready to build new facilities, this workshop provides an ideal forum for learning about sustainable, high performance building design strategies that help agencies comply with Executive Orders 13123 and 13101.
<b>Course Length</b>	Classroom course: 2 days; Web-based course: 1-3 months
<b>Fee</b>	Classroom course: \$195; Web-based course: \$75 (both courses include Resource Book)
<b>Prerequisites</b>	None
<b>Course Contents</b>	Taught by experts in sustainable building design, the course is focused on <i>new construction</i> and the 'whole building' approach, including the integration of architectural features and high-performance equipment using specific energy efficient strategies. Participants learn techniques for designing sustainable, climate-responsive, 'green' buildings that combine daylighting, natural ventilation, passive solar heating, energy efficient lighting/systems/ materials, and HVAC control strategies. The course also helps participants gain a more thorough understanding of water conservation, low-VOC building materials, indoor environmental quality, and site issues. The workshop covers: procurement of cost-effective design and consulting services; financing through Super Energy Savings Performance Contracts; and coupling low-energy buildings with green power procurement. Instructors demonstrate some of the latest energy-efficient design software and review the Internet-based Whole Building Design Guide and the U.S. Green Building Council's LEED Green Building Rating System™.
<b>Who Should Attend</b>	Federal project managers, architects, engineers, and contract A&Es
<b>Benefits to You</b>	<i>Low-Energy, Sustainable Building Design for Federal Managers</i> helps you comply with Executive Orders 13123 and 13101. Buildings designed with an integrated approach use significantly less conventional energy, make more effective use of renewable energy (such as PV and solar hot water), incorporate recycled and recyclable building materials, and minimize construction waste. All federal building types are good candidates – office buildings, visitors' centers, courthouses, barracks, warehouses, border stations, prisons, green-houses, etc. The course meets AIA/CES criteria for Quality Level 3. AIA members receive 12 learning units for full two-day participation in the classroom course.
<b>Instructors</b>	Professor Donald Prowler, FAIA, Donald Prowler & Associates; Joseph Bourg, Millennium Energy, LLC; Catherine Coombs, CIH, CSP, and William Bobenhausen, Steven Winter Associates, Inc.
<b>Contact</b>	Ellen Larson at the Sustainable Buildings Industry Council, 202-628-7400.

FY 2001 Schedule	
Fall 2000 (Date TBD)	Seattle, WA
April 26-27, 2001	Washington, DC
	(in conjunction with the Solar Energy Forum)
June 2001 (Date TBD)	Atlanta, GA
Date to be determined	Web-based training

## IMPLEMENTING RENEWABLE ENERGY PROJECTS

<b>Capsule Description</b>	Addressing the objectives of Executive Order 13123, <i>Greening of the Government</i> , this is an introductory course to cost-effective, renewable energy technologies for new and retrofit construction, electricity generation and green power procurement.
<b>Course Length</b>	Customized. Varies based on agency need. Traditional format is 2 days.
<b>Fee</b>	General workshop attendance is \$195 per person. Customized workshops are negotiable.
<b>Prerequisites</b>	None
<b>Course Contents</b>	<p>The two-day course focuses on implementing projects at Federal facilities using the following technologies: passive solar technologies for heating, cooling and daylighting; ground-source heat pumps for heating and cooling; solar water heating, solar preheating of ventilated air; photovoltaic and wind systems for remote or back-up power and state-of-the-art building-integrated photovoltaic power systems. The course also covers the FRESA renewable screen software, life-cycle costing, green power procurement and financing renewable energy systems.</p> <p>The agency-specific course can focus on any or all of these topics. It can be tailored for a regional format as well.</p>
<b>Who Should Attend</b>	Facility managers, energy coordinators, electrical, mechanical and HVAC engineers; architects, contract architects and engineers; associate project procurement officers.
<b>Benefits to You</b>	After attending the course, participants are able to identify possible cost-effective renewable applications for their facilities; evaluate the practical constraints and benefits of different technologies; initiate and sell to their management on cost-effective projects and green power.
<b>Instructors</b>	Nancy Carlisle, Patrina Eiffert, Andy Walker, Trina Brown, Jeff Dominick, Chandra Shah, Otto Van Geet, John Thornton, Ed Cannon, National Renewable Energy Laboratory; Donald Prowler, FAIA, Donald Prowler and Associates
<b>Contact</b>	FEMP Workshop Hotline, 703-243-8343
<b>FY 2001 Schedule</b>	To receive more information on the course schedule, please call the above contact. FEMP plans to offer the course at least once in the traditional two-day general format for all agencies. In addition, FEMP will work with up to three agencies to conduct customized, on-site, cost-shared workshops, with some general attendance if possible.

## LABORATORIES FOR THE 21<sup>ST</sup> CENTURY

(Jointly sponsored by DOE and EPA)

<b>Capsule Description</b>	A forum to discuss approaches to increase energy efficiency and incorporate renewable energy technologies in laboratory building design and operation.
<b>Course Length</b>	3 days
<b>Fee</b>	General attendance is \$200.
<b>Prerequisites</b>	None
<b>Course Contents</b>	The course presents tutorials on efficiency and renewable energy and presentations on designing, building, and operating low-energy laboratory buildings. The forum also includes plan critiques, and laboratory tours. Topics covered include: designing energy-efficient laboratories, benchmarking energy consumption, financing improvements, evaluating HVAC equipment and options, reviewing information systems and control strategies, adopting energy recovery strategies, using renewable energy, improving integrated laboratory design strategies, learning how utility restructuring affects utility options and costs, incorporating life-cycle cost concerns in decision-making, retrofitting laboratories, and commissioning new laboratories.
<b>Who Should Attend</b>	Designers, engineers, owners and operators of laboratory buildings. Individuals responsible for implementing section Sec.203 of E.O. 13123.
<b>Benefits to You</b>	After attending this course, participants are familiar with cost-effective strategies that can be implemented to assist agencies in complying with the Sec. 203 in E.O. 13123, which requires Federal agencies to reduce energy use in Laboratory buildings in 2010 by 25% over a 1990 base case.
<b>Instructors</b>	Dale Sartor P.E, Geoffrey Bell, P.E., Lawrence Berkeley National Laboratory; Donald Prowler, FAIA, Donald Prowler Associates; Otto Van Geet, P.E., Nancy Carlisle, National Renewable Energy Laboratory; Phil Wirdzek, Environmental Protection Agency.
<b>Contact</b>	FEMP Workshop Hotline, 703-243-8343

FY 2001 Schedule	
September 6-8, 2000	San Francisco, CA

To receive more information on the schedule, please call the above contact or check the Laboratories for the 21<sup>st</sup> Century Web site at:

[www.epa.gov/oaintrnt/21century/conf/index.html](http://www.epa.gov/oaintrnt/21century/conf/index.html)

EPA and FEMP plan to offer the forum at least once a year, most likely in the Fall of 2001.

## **WATER RESOURCE MANAGEMENT**

### **(Classroom and Telecourse)**

<b>Capsule Description</b>	How to assess, evaluate, resolve, and incorporate water efficiency into Federal project-assessment, planning, and implementation programs.
<b>Course Length</b>	2 days (Telecourse: 2 hours at your downlink site)
<b>Fee</b>	FREE
<b>Prerequisites</b>	None (Telecourse: Pre-class study materials are made available via the Internet.)
<b>Course Contents</b>	Legislation and legal issues concerning water management in the Federal sector; impacts of Executive Order 13123; opportunities for water conservation through elimination of waste, reuse/recycling of water resources and use of efficient technologies; auditing, leak detection and metering; impacts of conservation practices; evaluation and acquisition of water resources; improving the oversight, management, and operations and maintenance of a site's water infrastructure.
<b>Who Should Attend</b>	Facility water resource managers responsible for water as an asset, water conservation, and for the adherence to Executive Order 13123.
<b>Benefits to You</b>	The water resource professional gathers sufficient information, resources and understanding related to critical water issues to begin incorporating water efficiency into assessments, planning and project retrofit programs at Federal facilities.
<b>Instructors</b>	Kate McMordie-Stoughton, Bill Chvala, and Chip Larson Pacific Northwest National Laboratory.
<b>Contact</b>	To register for classroom course, to receive more information on or register for the telecourse, or to sponsor or find a downlink site, contact Nicole Roy, 509-372-4368. Register online for the telecourse at <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>

<b>FY 2001 Schedule</b>	
March 13, 2001	Telecourse
April 10-11, 2001	Albuquerque, NM

**LIFE-CYCLE COSTING**  
**(Telecourse)**

<b>Capsule Description</b>	Uses state-of-the-art distance teaching to introduce the elements of life-cycle costing (LCC) for energy and water conservation projects according to 10 CFR 436A and Executive Order 13123.
<b>Course Length</b>	2 hours at your downlink site.
<b>Fee</b>	Telecourse downlink costs and other site-specific costs are covered by local sponsors who may pass on their costs to attendees.
<b>Prerequisites</b>	Pre-class study materials are made available via the Internet.
<b>Course Contents</b>	Overview of life-cycle costing; LCC example.
<b>Who Should Attend</b>	Facility managers for energy and water, and facility designers
<b>Benefits to You</b>	Participants are able to determine the cost effectiveness of agency-funded and financed energy and water conservation projects using computer-aided life-cycle cost analysis.
<b>Instructors</b>	Linde Fuller, Economist, National Institute of Standards and Technology
<b>Contact</b>	For registration information, contact Shirley Pridemore at 423-369-3453 or Heather Schoonmaker at 865-777-9869, or register online at: <a href="http://www.energyworkshops.org/femp">www.energyworkshops.org/femp</a>

FY 2001 Schedule	
March 6, 2000	Telecourse

## LIFE-CYCLE COSTING

### (Basic LCC and Project-Oriented Workshops)

<b>Capsule Description</b>	Both classroom courses address the requirements of Executive Order 13123 and project implementation according to 10 CFR 436A. The Basic LCC Workshop takes the participants through the steps of an LCC analysis, explains the underlying theory and integrates it with the FEMP criteria. The second classroom course, the Project-Oriented LCC Workshop, builds on the Basic Workshop and focuses on the application of the methodology to more complex issues in LCC analysis.
<b>Course Length</b>	2 days
<b>Fee</b>	\$195 per person
<b>Prerequisites</b>	Elementary understanding of cash flows and discounting. Pre-course instructional materials will be made available to registrants for the Project-Oriented Workshop who have not attended the Basic Workshop.
<b>Course Contents</b>	<p><i>Basic Workshop:</i> Identifying alternatives, data requirements and assumptions; discounting future amounts to present values; calculating life-cycle costs, savings-to-investment ratio, and payback period; evaluating ESPCs; assessing uncertainty.</p> <p><i>Project-Oriented Workshop:</i> determining cost-effectiveness of HVAC equipment; optimal timing of retrofit of existing equipment; lease vs. purchase; evaluating effects of complex electricity rate schedules; fuel switching; evaluating ESPCs. In both workshops you will have classroom instruction and workbook exercises, use building life-cycle cost (BLCC) software, including the new, windowed version of BLCC.</p>
<b>Who Should Attend</b>	Facility managers for energy and water, and facility designers
<b>Benefits to You</b>	Ability to determine the cost effectiveness of energy and water conservation projects, using computer-aided life-cycle cost analysis.
<b>Instructors</b>	Linde Fuller, Economist, National Institute of Standards and Technology; Gene Meyer, PE, Kansas State University.
<b>Contact</b>	Nicole Roy, 509-372-4368, or register online at: <a href="http://www.pnl.gov/femp">www.pnl.gov/femp</a>

FY 2001 Schedule	
October 24-25, 2000	Denver, CO (Basic)
June 12-13, 2001	Rockville, MD (Project-Oriented)

Note: Locally sponsored sessions of the Basic FEMP LCC Workshop are also available from FEMP-qualified instructors. For further information, call the FEMP Help Desk at 1 800-DOE-EREC.



**INTRODUCTION TO FACILITY ENERGY DECISION SYSTEM (FEDS) \***

<b>Capsule Description</b>	Learn to use FEDS 4.1 software for Windows. FEDS 4.1 allows you to quickly survey optimum energy improvements for your buildings or entire site.
<b>Course Length</b>	1 day (We recommend that you stay for the Advanced FEDS class described on page 32.)
<b>Fee</b>	FREE
<b>Prerequisites</b>	A working knowledge of IBM-compatible personal computers.
<b>Course Contents</b>	Explore FEDS 4.1 features and capabilities as a method to quickly and objectively identify energy improvements for maximum cost-effective savings for your buildings or entire site. Discussions and hands-on exercises are combined to give you an understanding of the software, how to input data, modify parameters, and run FEDS to analyze savings opportunities.
<b>Who Should Attend</b>	Federal agency-level and installation-level energy managers who are responsible for adherence to Executive Order 13123 and who need to identify cost-effective, site-specific energy-retrofit projects.
<b>Benefits to You</b>	Learn the basics of FEDS 4.1 and its capabilities, and identify the information that is required to run the software. Attendees are provided with workbook and FEDS 4.1 software.
<b>Instructors</b>	Rosemarie Bartlett and Bob Dahowski, Pacific Northwest National Laboratory.
<b>Contact</b>	Nicole Roy, 509-372-4368, or register online at: <a href="http://www.pnl.gov/femp">www.pnl.gov/femp</a>

<b>FY 2001 Schedule*</b>
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February 7, 2001
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Honolulu, HI**
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\* A second three-day workshop is planned and will be co-sponsored by FEMP and DOE's Rebuild America Program.

\*\* Same place, same week:

Operations and Maintenance Management  
Advanced Facility Energy Decision System

February 5-6, 2001  
February 8-9, 2001

## ADVANCED FACILITY ENERGY DECISION SYSTEM (FEDS) \*

<b>Capsule Description</b>	Survey and analyze optimum energy improvements for your building or entire site, using FEDS 4.1 software for Windows. At the completion of this course you have developed a list of potential life-cycle cost effective energy projects. These projects not only comply with Executive Order 13123 directives, but provide enough detail to allow solicitation under a variety of conventional and alternative financing options including: ESPC or Super ESPC financing, or internal/appropriated funding options.
<b>Course Length</b>	2 days
<b>Fee</b>	FREE
<b>Prerequisites</b>	A working knowledge of IBM-compatible personal computers.
<b>Course Contents</b>	Use FEDS 4.1 to quickly and objectively identify energy improvements for maximum cost-effective savings in accordance with life-cycle-costing methodology; assess and analyze energy efficiency in multiple buildings and at multiple sites without requiring the user to enter engineering parameters; analyze fuel switching opportunities; analyze alternative financing opportunities; and track emissions reductions.
<b>Who Should Attend</b>	Federal agency-level and installation-level energy managers who are responsible for adherence to Executive Order 13123 and who need/want to identify cost-effective, site-specific energy-retrofit projects.
<b>Benefits to You</b>	Bring sufficient site information to this hands-on course (a list is provided in advance of the course) and have instructors help you: 1) prepare your FEDS case, 2) run FEDS on your case, 3) study FEDS results, and 4) identify potential projects. Given the nature of this hands-on course, class size is limited, so sign up early. Participants are provided with the FEDS 4.1 software.
<b>Instructors</b>	Rosemarie Bartlett and Bob Dahowski, Pacific Northwest National Laboratory.
<b>Contact</b>	Nicole Roy, 509-372-4368, or register online at: <a href="http://www.pnl.gov/femp">www.pnl.gov/femp</a>

FY 2001 Schedule	
February 8-9, 2001	Honolulu, HI**

\* A second three-day workshop is planned and will be co-sponsored by FEMP and DOE's Rebuild America Program.

\*\* Same place, same week:  
Operations and Maintenance Management February 5-6, 2001  
Introduction to Facility Energy Decision System February 7, 2001

## FEMP PRODUCTS LIST REQUEST FORM

**Mail, Call or Fax your reply to:**

U.S. Department of Energy,  
Office of Energy Efficiency and Renewable Energy  
Federal Energy Management Program, EE-90  
1000 Independence Avenue, SW  
Washington, DC 20585-0121

Call 1-800-DOE-EREC (363-3732) or Fax 703-893-0400;  
Outside of the U.S. call: 703-287-8391;

Or order online from the FEMP Home Page:  
[www.eren.doe.gov/femp/ordermaterials.html](http://www.eren.doe.gov/femp/ordermaterials.html)

**FEMP FOCUS NEWSLETTER:**

- ☐ Subscription to the *FEMP Focus* Newsletter
- ☐ Latest/Past/Special Issue \_\_\_\_\_
- ☐ Executive Order 13123 – July 1999
- ☐ Executive Order 12902 – Jan. 1994
- ☐ Energy Policy Act of 1992 – Feb. 1992

**SOFTWARE:**

- ☐ BLCC/ERATES/EMISS Software and Manuals
  - BLCC (The Building Life-Cycle Cost), Version 4.8-2000*
  - BLCC Manual*
  - ERATES (Electricity Rates), Version 1.11*
  - ERATES Manual*
  - EMISS, Version 1.0*
- ☐ FEDS (Federal Energy Decision Screening), Version 4.1 Software and Manual\*
- ☐ FRESA (Solar/Renewable Energy), Version 2.5 Software and Manual
- ☐ LSST (The Lighting System Screening Tool), Version 1.3 Software
- ☐ LSST Manual\*
- ☐ LTSM (The Lighting Technology Screening Matrix), Version 2.1 Software
- ☐ LTSM Manual\*
- ☐ WATERGY (Water Conservation) Software
- ☐ WATERGY Manual

Available to download from Web site ONLY:

FLEX (Federal Lighting Energy Expert), Version 3.0 Software

\* AVAILABLE TO FEDERAL PERSONNEL ONLY

**PUBLICATIONS:**

- ☐ Advanced Lighting Guidelines: 1993
- ☐ The Architect's and Engineer's Guide to Energy Conservation in Existing Buildings, vol. 1
- ☐ The Architect's and Engineer's Guide to Energy Conservation in Existing Buildings, vol. 2
- ☐ Big Savings From the World's Largest Installation of Geothermal Heat Pumps at Fort Polk, Louisiana
- ☐ Counting on Solar Power for Disaster Relief
- ☐ Energy Prices and Discount Factors 2000 (for BLCC)
- ☐ Federal Government Energy Consumption at a Glance – 1999
- ☐ Federal Lighting Guide
- ☐ FY 2001 Training Catalog
- ☐ Greening Federal Facilities
- ☐ Greening of DOE Headquarters – Second Year Status Report
- ☐ Greening of the White House – Six Year Report Nov. 1999
- ☐ How to Get Information on New Technologies
- ☐ How to Implement an Energy-Saving Project (Seven Steps to Savings)
- ☐ NIST Handbook 135 1995

**FEDERAL PROCUREMENT CHALLENGE:**

- ☐ Buying Energy Efficient Products

**FEDERAL TECHNOLOGY ALERTS:**

- ☐ Commercial Heat Pump Water Heaters
- ☐ Ground Source Heat Pumps for Commercial Applications
- ☐ Liquid Refrigerant Pumping
- ☐ Natural Gas Fuel Cells
- ☐ Non-Chemical Technologies for Scale and Hardness Control
- ☐ Ozone Cooling Tower Water Treatment
- ☐ Parabolic-Trough Solar Water Heating
- ☐ Photovoltaics
- ☐ Refrigerant Subcooling
- ☐ Residential Heat Pump Water Heaters
- ☐ Solar Water Heating
- ☐ Spectrally Selective Glazing
- ☐ Steam Trap Performance Assessment
- ☐ Transpired Collectors (Solar Preheaters for Outdoor Ventilation Air)
- ☐ Two-Wheel Desiccant Dehumidification System
- ☐ Ultrasonic Humidifiers
- ☐ Waste Chill Recovery Heat Exchangers for Commercial-Size Automatic Ice Makers

**CASE STUDIES:**

- ☐ Brighter Days and Nights at the US Soldiers' and Airmen's Home
- ☐ Electrifying Pinnacles
- ☐ Energy-Efficient Retrofits at the Carl Hayden Visitors Center
- ☐ Energy-Efficient Technologies in the Frances Perkins Building
- ☐ ESPC Case Study – Communication and Collaboration Keep San Francisco VA Medical Center Project on Track
- ☐ ESPC Case Study – First Regional Super ESPC A Success on Kodiak Island
- ☐ ESPC Case Study – Regional Super ESPC Saves Energy and Dollars at NASA Johnson Space Center
- ☐ The Forrestal Building Relighting Project Saves \$400K Annually Heating with Steam at VA Medical Centers
- ☐ Fort Irwin Energy Efficiency Improvement Program
- ☐ Greening of the White House
- ☐ Heating with Steam at VA Medical Centers
- ☐ High Temperature Hot Water Plant at Naval Amph. Base
- ☐ New National Conservation Training Center A Model of Energy Efficient Design
- ☐ Procuring Low-Energy Design and Consulting Services
- ☐ Renewable Energy at Channel Island National Park
- ☐ Showering with the Sun at Chickasaw National Recreation Area - Detailed Case Study
- ☐ Solar Success Story at Moanalua Terrace
- ☐ Unique Partnership at Fort Lewis
- ☐ USMC's Twentynine Palms Central Heating Plant
- ☐ Water Conservation at the Denver Federal Center

## FEMP PRODUCTS LIST REQUEST FORM (Continued)

### ENERGY SAVINGS PERFORMANCE CONTRACTING:

- ☐ ESPC Information Videotape
- ☐ ESPC Legislation Videotape
- ☐ ESPC Regulation
- ☐ Federal Measurement and Verification Guidelines
- ☐ How to Implement an Energy Savings Project
- ☐ List of Qualified Firms
- ☐ M&V Guidelines for ESPC Videotape
- ☐ Model Solicitation
- ☐ Practical Guide to Savings and Payments in Super ESPC Delivery Orders
- ☐ Request Form for Qualified List Application
- ☐ Super Energy Savings Performance Contracts
- ☐ Table of Awarded Contracts

### ANNUAL REPORTS AND REPORTING:

- ☐ 1999 FEMP Accomplishments Report
- ☐ 1998 FEMP Accomplishments Report
- ☐ FY 1996 Annual Report to Congress
- ☐ FY 1995 Annual Report to Congress
- ☐ FY 1994 Annual Report to Congress
- ☐ Greening of the White House -- Second Annual Report

### PROGRAM OVERVIEWS:

- ☐ Energy Efficiency and Renewable Energy in National Parks
- ☐ Energy Savings Performance Contracting
- ☐ Federal Energy Efficiency through Utility Partnerships
- ☐ Federal Energy Showcases
- ☐ Federal Participation in Million Solar Roofs
- ☐ FEMP Program Overview
- ☐ FEMP Renewable Energy Program
- ☐ FEMP Training Program
- ☐ Fort Lewis Conservation Program
- ☐ Geothermal Heat Pumps
- ☐ In-House Energy Management Program
- ☐ Measurement and Verification Guidelines
- ☐ New Technologies Demonstration Program
- ☐ Photovoltaics – Systems that Convert Sunlight to Electricity Can Meet Many Different Needs
- ☐ SAVEnergy Program
- ☐ Solar Ventilation Preheating
- ☐ Solar Water Heating
- ☐ Super Energy Savings Performance Contracting
- ☐ Water Conservation

### FEDERAL ENERGY AND WATER MANAGEMENT AWARDS:

- ☐ Criteria and Guidelines

### UTILITY INCENTIVES:

- ☐ Alternative Financing Action Kit for Utility Incentives
- ☐ Energy Efficiency Solutions for the Chet Holifield Federal Building
- ☐ Innovative Utility Partnership at Fort Lewis, WA
- ☐ Partnerships with the U.S. Postal Service
- ☐ Thermal Energy Storage at a Federal Facility
- ☐ Total Solutions Approach at White Sands Missile Range

### LIMITED EDITIONS:

- ☐ Specifications: Energy Efficient Lighting - Technologies for Existing Federal Buildings

### Videos:

- ☐ Saving with Solar
- ☐ TeleFEMP II: Making Projects Happen
- ☐ TeleFEMP III: Saving Billions from Federal Energy Management
- ☐ TeleFEMP IV: Saving Billions by Greening Federal Facilities
- ☐ TeleFEMP V: Saving Billions through Super Energy Saver Performance Contracts and Utility Incentives
- ☐ TeleFEMP VI: Energy Technology Solutions for the 90s and Beyond
- ☐ TeleFEMP VII: Accessing Alternative Financing Mechanisms
- ☐ TeleFEMP VIII: FEMP's Suite of Services

### CD-ROMs:

- ☐ Agency Success Stories
- ☐ Federal Greening Initiatives
- ☐ Introduction to FEMP

### ENERGY EFFICIENCY AWARENESS:

- ☐ "Clean Energy for the 21<sup>st</sup> Century" poster, 18"x24" (5)
- ☐ "Clean Energy for the 21<sup>st</sup> Century" poster, 12"x16" (5)
- ☐ Facing the Future, A Directory of Federal Champions
- ☐ Earth Day 2000 poster, 18"x24" (5)
- ☐ Earth Day 2000 poster, 9"x12" (5)
- ☐ "Save Energy Now to Fuel Their World" poster, 18"x24" (30)
- ☐ "Save Energy Now to Fuel Their World" poster, 12"x16" (30)
- ☐ You Have the Power posters (100)
- ☐ You Have the Power – Power Kit
- ☐ YHTP Brochure – FEMP Campaign to Honor, Inspire, Encourage Energy Leadership
- ☐ YHTP Brochure – FEMP Has the Know-How

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization/Agency: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Country: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

**Fax form to 703-893-0400.**

## **FEMP FOCUS NEWSLETTER**

*FEMP Focus* is a bimonthly newsletter published by FEMP that provides up-to-date information on resources, projects and other information available through FEMP.

To be added to the *FEMP Focus* mailing list, or to change subscription information, please contact:

**Judy Hockenbery**  
MA-221-Germantown  
US Department of Energy  
Germantown, MD 20874-1290

Phone: 301-903-3118  
Fax: 301-903-9271

Email: [judy.hockenbery@hq.doe.gov](mailto:judy.hockenbery@hq.doe.gov)

## **FEMP “SAVEnergy ACTION PLAN” AUDITS**

Ideally, the FEMP training you receive is quickly used in “making projects happen.” FEMP can help you get off to a fast start on these projects through its “SAVEnergy Action Plan” audits. For more information, please call the Energy Efficiency and Renewable Energy Clearinghouse, 1-800-DOE-EREC.

You can find general information about the program and how it operates, and download an overview of the Action Plan, a SAVEnergy Audit Request form, and a SAVEnergy Audit Summary form at:

[www.eren.doe.gov/femp/techassist/savenergyprog.html](http://www.eren.doe.gov/femp/techassist/savenergyprog.html)

**FEMP “LOCATOR” FOR NON-FEMP TRAINING COURSES:**

**Finding Other Training Resources through the *Training Event Locator System* on the Web**

The Department of Energy’s Federal Energy Management Program (FEMP) manages the FEMP *Training Event Locator System* (LOCATOR), a database of energy management training courses. There is a link to LOCATOR from the FEMP Web site at [www.eren.doe.gov/femp/resources/training/locator.htm](http://www.eren.doe.gov/femp/resources/training/locator.htm)

LOCATOR helps the energy and water conservation community obtain information about training courses and conferences offered by organizations other than FEMP. These organizations include government entities, colleges and universities, professional associations, industry groups, and private-sector organizations. LOCATOR provides training course information including:

- Course Category and Course Sub-Categories;
- Course Title;
- Event Dates and Location;
- Organization Contact Information;
- Course Cost;
- Target Audience Information;
- Continuing Education Units (CEUs); and,
- Other information as appropriate.

**Course Categories**

The Course Categories are a controlled vocabulary which provide the primary means for searching and retrieving training course information from the database. Course Categories and Sub-Categories are based on the training areas required for “Trained Energy Managers” by the Energy Policy Act of 1992 and the training goals of Executive Order 13123. The Course Categories and Sub-Categories are:

- |  |   |
|--|---|
| • Alternative Financing  | • Building Energy Codes and Applicable Professional Standards |
| • Fuel Supply and Pricing <ul style="list-style-type: none"><li>- Deregulation</li></ul>   | • Energy Accounting and Analysis                              |
| • Operations and Maintenance   | • Life-Cycle Cost Methodology                                 |
| • Renewables, Greening, Sustainability <ul style="list-style-type: none"><li>- Green Power</li><li>- Building Design and Commissioning</li></ul>                                     | • Instrumentation for Energy Surveys and Audits               |
| • Water Conservation   | • Mobility Energy and   |
| • Fundamentals of Building Energy Systems <ul style="list-style-type: none"><li>- Building Envelope</li><li>- Lighting</li><li>- HVAC</li><li>- Energy Efficient Equipment</li></ul> | • Other   |

The Course Categories, which encompass Sub-Categories, may be searched including all the Sub-Categories (the default option), or specific Sub-Categories may be searched individually. When multiple Course Categories are combined into a single search, all applicable Sub-Categories are included. Other LOCATOR data elements available for searching and filtering purposes are Course Title (text words), Organization Name (drop down list), Event State (drop down list), and Event Date. All these data elements may be combined to provide search results tailored to the specific requirements of each user. Summary search results are displayed in a new window, and each entry in the list may be selected to display detailed course information in another new window.

### **LOCATOR System Operations**

LOCATOR features easy-to-use on-screen user prompts and instructions. The Main Menu on the left side of the screen provides a constant location for the LOCATOR menu options. The Main Menu provides two report links for viewing and printing retrieved course information. The "Master Summary Report " provides a quick reference list of course titles and Subject Categories, and the "Detail Report" provides all the course information in LOCATOR for the search retrieval.

After users have identified pertinent courses of interest, they are responsible for contacting the course sponsors directly to obtain detailed course descriptions, register for a specific course, or obtain any additional information which may be required. LOCATOR provides active links to course sponsors' e-mail and Web site addresses, where applicable.

Organizations that offer training courses designed to improve the energy-saving capabilities of operations staff, designers, managers, planners, and acquisition personnel at Federal facilities may submit information for entry in LOCATOR. The "Add Course" link on the Main Menu provides a convenient screen for entering course information. FEMP retains the right to accept or decline all course submissions, and to edit the record in the LOCATOR database.

FEMP recommends the following personal computer configuration for the best operation of the LOCATOR application:

- Microsoft Internet Explorer 5.01 (preferred), or Netscape Communicator 4.7 (preferred); and,
- 1024 x 768 screen resolution.

If assistance is required with any aspect of LOCATOR, there are "Help" files which users may access. There is also an e-mail link to the LOCATOR Web site administrator.

## **ACCESS TO USEFUL INFORMATION**

**FEMP Help Desk      Energy Efficiency and Renewable Energy Clearinghouse (EREC)**

**Toll-free phone:** 800-DOE-EREC (800-363-3732)

**Fax:** 703-893-0400

**FEMP on the  
Internet**

**Home page:**

[www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)

**Training information:**

[www.eren.doe.gov/femp/resources/training/femptraining.html](http://www.eren.doe.gov/femp/resources/training/femptraining.html)

**FEMP by Fax      202-586-3000**



## FEMP STAFF CONTACT LIST

## FEMP Help Desk

800-363-3732

Fax: 703-893-0400

## FEMP Office

202-586-5772

Fax: 202-586-3000

## FEMP Home Page

[www.eren.doe.gov/femp](http://www.eren.doe.gov/femp)

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Beth Peterman (Golden) 303 275-4719

Cheri Sayer (Seattle RO) 206 553-7838

Dave Waldrop (Atlanta RO) 404 347-3483

Eileen Yoshinaka (Seattle RO in HI) 808 541-2564

Atlanta RO: AL, AR, FL, GA, KY, MS, NC, SC, TN, PR, VI

Boston RO: CT, ME, MA, NH, NY, RI, VT

Chicago RO: IA, IL, IN, MI, MN, MO, OH, WI

Denver RO: CO, KS, LA, MT, NE, NM, ND, OK, SD, TX, UT, WY

Philadelphia RO: DE, DC, MD, NJ, PA, VA, WV

Seattle RO: AK, AZ, CA, HI, ID, NV, OR, WA, AS, GM, PW, CNMI

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LBNL: Lawrence Berkeley National Laboratory

NREL: National Renewable Energy Laboratory

ORNL: Oak Ridge National Laboratory

PNNL: Pacific Northwest National Laboratory

SNL: Sandia National Laboratories

## WHAT IS THE STATUTORY BASIS FOR FEMP TRAINING?

**Executive Order  
13123 - *Greening  
the Government  
Through Efficient  
Energy  
Management*  
June 3, 1999**

The Order, which amends EPACT (appears below) provides that “agencies shall ensure that all appropriate personnel receive training for implementing this order.

- (1) DOE, DOD, and GSA shall provide relevant training or training materials for those programs that they make available to all Federal agencies relating to the energy management strategies contained in this order.” [Sec. 406(d) Training and Education]

(The entire text of E.O. 13123 can be found on the FEMP Web site at:  
[www.eren.doe.gov/femp/aboutfemp/exec13123.htm](http://www.eren.doe.gov/femp/aboutfemp/exec13123.htm))

Facility management and associated contracting personnel are specifically affected by the following:

The order requires Federal agencies to achieve by 2010:

- **35% greater energy efficiency** in buildings relative to 1985 levels; and
- **30% cut in greenhouse gas emissions** from building-related energy use relative to 1990.

The order directs agencies to maximize the use of:

- **Energy Savings Performance Contracts and Utility Contracts**, in which private companies make energy improvements on Federal facilities at their own expense and receive a portion of the resulting savings;
- **Life-cycle cost analysis** so agencies see the long-term savings from energy investments.
- **ENERGY STAR® and other energy efficient products**, everything from light bulbs to boilers; and
- **Renewable energy** technologies and sources (solar, wind, geothermal, and biomass).

**EPACT  
Requirements**

The Energy Policy Act of 1992 (EPACT) requires that Federal agencies achieve the following important goals, with the assistance of the Department of Energy. FEMP training is one valuable means of helping agencies:

- Achieve BTU energy savings goals;
- Significantly increase the use of solar and other renewable technologies;
- Manage the use of water;
- Encourage the alternative financing of energy and water improvements; and
- Develop “Trained Energy Managers.”

**Trained Energy  
Manager  
Requirements**

Section 157 of EPACT requires that each agency establish and maintain a program to ensure that “facility energy managers are trained energy managers.” On October 28, 1993, the Interagency Management Task Force’s Training Working Group issued the following guidance defining the proficiency to be achieved by “Trained Energy Managers” (TEMs). The Working Group advised agencies to manage their own qualifying programs and FEMP to provide supportive training. Currently, Continuing Education Units (CEUs) are available for the “FEMP Lights” and “Designing Low-Energy Sustainable Buildings” workshops.

**Trained Energy  
Manager**

In all areas listed below, a TEM must have demonstrated proficiency or completed a course of study in the following:

- Fundamentals of building energy systems;
- Building energy codes and applicable professional standards;
- Energy accounting and analysis;
- Life-cycle cost methodology;
- Fuel supply and pricing; and
- Instrumentation for energy surveys and audits.

**Demonstrated  
Proficiency**

Proficiency is demonstrated through on-the-job performance in current or previous positions. An acceptable substitute for demonstrated proficiency on the job is certification as an energy manager by an appropriate professional organization or public education institute.

**Completed  
Course of Study**

The course of study must have been through either a private or public educational institution, a Government agency program, or a professional association training program.

## AREAS OF REQUIRED EXPERTISE AND RECOMMENDED FEMP COURSES

*Note: Course Number Key is at the end of this section .*

### **(1) Fundamentals of Building Energy Systems**

Proficiency or training in the design and operation of heating, ventilation and air conditioning systems for buildings, as well as the implications of renewable energy, power and lighting systems and thermal envelope design on building energy systems. Some specific subjects in this field include: mechanical systems utilization; electrical system utilization; utility and process systems; building envelope; cogeneration; energy management systems; and controls. (FEMP Course Numbers 1, 4, 6, and 7) Please see Note, below, for videotape information.

### **(2) Building Energy Codes and Applicable Professional Standards**

Proficiency or training in the use and applicability of such codes and standards as the American Society of Heating, Refrigeration and Air Conditioning Engineers, the Illuminating Engineering Society, the National Electrical Code, and the Code of Federal Regulations (10 CFR parts 400 through 499) as it relates to Federal energy management. (FEMP Course Numbers 1 and 4)

### **(3) Energy Accounting and Analysis**

Proficiency or training in establishing an energy accounting system which provides for the methodical examination and review of energy sources, uses and costs for the purposes of recording and reporting such information, or to identify and correct existing problems or potential problems. (FEMP Course Numbers 1, 3, 11, and 12. Your agency may have training on this item. Please see Note, below, for videotape information. Also, please use FEMP's Training Event Locator System, described on page 36.)

### **(4) Life-Cycle Cost Methodologies**

Proficiency or training in those methods identified in 10 CFR part 436, or those engineering economics courses taught by educational institutions which include discussions of the time value of money, discount and escalation rates, rate of return, savings-to-investment ratio, and knowledge of the Federal requirements in 10 CFR part 436. (FEMP Course Number 2) The new E.O. 13123 calls for the use of LCC for purchasing new equipment, new building design and planning projects.

### **(5) Fuel Supply and Pricing**

Proficiency or training in utility rate structures and encompassing: time-of-day, demand and use charges; knowledge of non-utility fuel pricing, including seasonal pricing and storage cost; knowledge of Government procurement procedures for both utility and non-utility fuels; and knowledge of relative costs of various alternative fuel types. A level of proficiency and experience within the energy managers' immediate organization is acceptable. (FEMP Course Numbers 1, 11, and 12. Also check training within your agency and FEMP's Training Event Locator System.) Please see Note, below, for videotape information.

### **(6) Instrumentation for Energy Surveys and Audits**

Proficiency or training in the uses of a range of hand-held and fixed instruments for the measurement of temperature, humidity, quantity of electric or steam power, fuel flow, combustion products in exhaust gases, lighting levels, and air infiltration. (Please see Note, below, for videotape information. Please check training within your agency and FEMP's Training Event Locator System. For "SAVEnergy Action Plan" Audit information please call Karen Thomas at 202-651-7530.)

**Renewables and Sustainable Design**

The new E.O. 13123 directs agencies to maximize their use. (FEMP Course Numbers 4 and 7)

**Water Conservation**

EPACT does not require that TEMs be proficient in water conservation techniques and technology. However, EPACT does require that agencies implement water conservation projects with a pay-back of 10 years or less. Since TEMs are likely to be involved in such projects, they should be encouraged to obtain training and/or proficiency in water conservation. (FEMP Course Number 9)

**Project Financing/Utility Incentives**

EPACT requires that agencies encourage the use of alternative project financing, including utility incentives, in reaching mandated energy savings goals. (FEMP Course Numbers 8, 11, and 12)

**Energy Efficient Products**

Finally, you will learn how to select and procure the most energy efficient products in FEMP's "Buying Energy Efficient Products" course, number 10.

*Note: FEMP's energy analysis software tools will expedite and optimize your EPACT goal achievement.* (FEMP Course Numbers 2 and 5)

**KEY FOR FEMP COURSES**

Course # 1	Revised Energy Management Telecourse
Course # 2	Life-Cycle Costing (Basic and Project-Oriented)
Course # 3	Operations and Maintenance Management
Course # 4	Designing Low-Energy, Sustainable Buildings
Course # 5	FEDS (Introduction and Advanced)
Course # 6	FEMP Lights (Web and Advanced)
Course # 7	Implementing Renewable Energy Projects and Laboratories for the 21 <sup>st</sup> Century
Course # 8	Energy Savings Performance Contracting and Super ESPC
Course # 9	Water Resource Management
Course # 10	Buying Energy Efficient Products
Course # 11	Utility Project Financing
Course # 12	Electric Utility Restructuring

**Note:** Previous FEMP courses now available only on videotape are: Energy Fundamentals; Mechanical and Electrical Systems; Fuel Supply and Pricing; Energy Accounting and Analysis; and Energy Conservation Opportunities.

Please see page 11 for ordering information.

## ENVIRONMENTAL AND ECONOMIC BENEFITS OF FEDERAL ENERGY MANAGEMENT ACTIVITIES

The production and use of energy causes more environmental damage than any other human activity (*The Economist*, October 1995). Emissions associated with fossil fuel combustion are linked to a variety of deadly lung diseases including asthma, emphysema, and cancer. As a Nation we spend billions of dollars each year trying to control this pollution.

One strategy for pollution prevention, the installation of energy efficient technologies, can actually reduce the cost of environmental protection by simultaneously lowering end users' energy bills and the emissions associated with energy use. Energy efficiency can be a cost-effective strategy for reducing both greenhouse gas emissions such as carbon dioxide (CO<sub>2</sub>), and acid rain precursors such as nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>), which are released primarily by energy production and use. In addition to air pollution, energy efficiency also addresses waste disposal, land use, and water quality concerns associated with the total fuel cycle.

The Federal Government is working to reduce emissions and associated costs by improving the energy efficiency of its buildings. The Government's goal is to reduce energy consumption per square foot by 35 percent in buildings by 2010 compared to 1985. Efforts made toward this goal resulted in a 21 percent reduction in 1999 and reduced emissions since 1990 by 2.5 million metric tons of carbon into the atmosphere. When the contributions of the Federal industrial and transportation sectors are added in, reduced carbon emissions total 8.6 million metric tons since 1990.

As the largest single consumer of energy in the United States, the Federal Government spent \$4 billion last year to light, heat, and operate buildings. A significant amount of money is also spent to maintain these buildings, many of which were built before the energy crisis of the 1970s and are not energy efficient.

Approximately \$5 billion of investment is needed to repair or replace aging equipment in buildings between now and 2010 to meet the Government's goal of reducing energy intensity by more than one third. This investment would contribute significantly to deficit reduction by leading to more efficient operations and lower energy costs. Generally, each dollar invested in energy efficiency results in a savings of four dollars over a project's life. In addition, this level of investment would create approximately 15,000 new jobs during the goal period. Potential energy efficiency projects are an untapped economic resource and Federal facilities comprise vast resource fields for job-creating economic activity in the construction, engineering, manufacturing, and financing industries.

Where will the money for these energy projects come from? Direct Federal appropriations will continue as one source of funding, even though these have been greatly reduced in recent years. Utilities are another valuable source of funding for efficiency projects and often offer energy services in addition to their more traditional role as power providers. Energy savings performance contracts (ESPCs) will be an important third source of funding in these fiscally-modest times. These contracts make use of the financing potential of lower utility bills to pay for energy- and cost-saving repairs and renovations. Federal performance contracting is a public/private sector partnership where a private sector energy service company finances the up-front cost of

purchasing and installing new energy-efficient equipment and the Government repays the energy service company over the life of the contract. Payment is made from the savings resulting from reduced energy costs. Therefore, less funding is required through the appropriations process to accomplish the goals of improving infrastructure and reducing energy-related emissions.

The Government's new Super ESPCs will also provide the private sector with easier access to the \$5 billion market for Federal energy efficiency improvement. These indefinite-delivery, indefinite-quantity, multiple-award contracts streamline the procurement process and greatly reduce the time it takes to solicit for and bid on new work, along with reducing the Government's own procurement costs.

Budget pressures are certain to result in further reductions in funding required to maintain and upgrade Government buildings. Performance contracting offers an attractive alternative for raising much of the required \$5 billion which in turn will generate total savings of approximately \$20 billion over the next 20 years. The environmental benefits of this investment—reduced harmful emissions into the atmosphere—will also be substantial, with potential annual avoidance of 3.3 million metric tons of CO<sub>2</sub>, 28,000 metric tons of NO<sub>x</sub>, and 49,000 metric tons of SO<sub>2</sub>.